CLAIMS

1. A method of storing solar energy including the steps of:

producing photosynthetically an amount of biomass capable of forming biomass coal;

harvesting said amount of photosynthetically produced biomass;

regrowing, between two successive harvesting operations, an amount of biomass which corresponds to said harvested amount of photosynthetically produced biomass;

converting said harvested amount of photosynthetically produced biomass into biomass coal; and

durably and retrievably storing said biomass coal in order to thereby reduce the atmospheric CO_2 level by an amount of CO_2 which is equivalent to the amount of carbon present in the stored biomass coal.

2. The method as claimed in claim 1, wherein said step of storing said biomass coal entails storing said biomass coal under an inert gas condition.

3. The method as claimed in claim 1, wherein said step of storing said biomass coal under said inert gas condition entails using CO_2 as said inert gas.

4. The method as claimed in claim 1, wherein said step of storing said biomass coal entails storing said biomass coal in at least one subterraneous cavity.

5. The method as claimed in claim 3, wherein said step of storing said biomass coal in said at least one subterraneous cavity further comprises selecting said subterraneous cavity from a coal mine, an ore mine or a salt mine.

6. The method as claimed in claim 1, wherein said step of storing said biomass coal entails storing said biomass coal in an above-ground bunker facility.

7. The method as claimed in claim 1, further including the steps of:

prior to said step of storing said biomass coal, separating a fraction of said biomass coal from a remaining portion of said biomass coal;

respectively converting said separated fraction of said biomass coal either (i) into energy or (ii) into an energy source; and

limiting said separated fraction of said biomass coal to an amount which, upon conversion into either energy or an energy source with concomitant release of CO_2, generates an amount of CO_2 which is smaller than the amount of CO_2 equivalent to the amount of carbon present in said remaining portion of said biomass coal.

8. The method as claimed in claim 7, wherein said step of converting said separated fraction of said biomass coal into either energy or an energy source includes converting said biomass coal into synthesis gas for producing industrial products.

9. The method as claimed in claim 7, wherein said step of converting said separated fraction of said biomass coal into either energy or energy source includes converting said biomass coal into hydrogen as the energy source.

10. The method as claimed in claim 1, further entailing the steps of:

retrieving a fraction of said stored biomass coal from a remaining portion of said stored biomass coal;

respectively converting said retrieved fraction of said stored biomass coal into either (i) energy or (ii) an energy source; and

limiting said retrieved fraction of said stored biomass coal to an amount which, upon conversion into energy or an energy source with concomitant release of CO_2 into the atmosphere, generates an amount of CO_2 equivalent to the amount of carbon present in said remaining portion of said stored biomass coal.

11. The method as claimed in claim 10, wherein said step of converting said retrieved fraction of said biomass coal into the energy or the energy source includes converting said biomass coal into synthesis gas for producing industrial products.

12. The method as claimed in claim 10, wherein said step of converting said retrieved fraction of said biomass coal into the energy or the energy source includes converting said retrieved fraction of said biomass coal into hydrogen as the energy source.

13. The method as claimed in claim 1, further including:

carrying out a sequence of a multiple number of said steps of harvesting, regrowing said harvested biomass, converting said harvested biomass into biomass coal and storing said biomass coal in order to achieve a balance between the rate of CO_2 removal from the atmosphere and the rate of CO_2 release into the atmosphere at an atmospheric CO_2 level below the level causing the undesired greenhouse effect.

14. The method as claimed in claim 13, further including the steps of:

retrieving a fraction of said stored biomass coal from a remaining portion of said stored biomass coal;

respectively converting said retrieved fraction of said stored biomass coal either into (i) energy or (ii) an energy source; and

limiting said retrieved fraction of said stored biomass coal to an amount corresponding to at least one of said steps of storing said biomass in said sequence of said multiple number of steps of harvesting and regrowing said harvested biomass, converting said harvested biomass into biomass coal and storing said biomass coal.

15. The method as claimed in claim 14, wherein said step of converting said retrieved fraction of said stored biomass coal into the energy or the energy source includes converting said retrieved fraction of said stored biomass coal into synthesis gas for producing industrial products.

16. The method as claimed in claim 14, wherein said step of converting said retrieved fraction of said stored biomass coal into the energy or the energy source includes converting said retrieved fraction of said stored biomass coal into hydrogen as an energy source.

17. The method as claimed in claim 1, wherein:

said step of photosynthetically producing an amount of biomass capable of forming coal entails producing an amount of wood as said amount of photosynthetically produced biomass;

said step of harvesting said amount of photosynthetically produced biomass entails harvesting said produced amount of wood;

said step of regrowing, between two successive harvesting operations, said amount of biomass which corresponds to said harvested amount of photosynthetically produced biomass, entails regrowing, between two successive harvesting operations, said harvested amount of wood;

said step of converting said harvested amount of photosynthetically produced biomass into biomass coal entails converting said harvested amount of wood into charcoal; and

during said step of durably and retrievably storing said biomass coal in order to thereby reduce the atmospheric CO_2 level by an amount of CO_2 which is equivalent to the amount of carbon present in said stored biomass coal, durably and retrievably storing said charcoal in order to thereby reduce the atmospheric CO_2 level by said amount of CO_2 which is equivalent to the amount of carbon present in said stored charcoal.

18. The method as claimed in claim 17, wherein said step of storing said charcoal encompasses storing said charcoal under an inert gas condition.

19. The method as claimed in claim 18, wherein said step of storing said charcoal under said inert gas condition entails using CO_2 as said inert gas.

20. The method as claimed in claim 17, wherein said step of storing said charcoal entails storing said charcoal in at least one subterraneous cavity.

21. The method as claimed in claim 20, wherein said step of storing said charcoal in said at least one subterraneous cavity further comprises selecting said subterraneous cavity from a coal mine, an ore mine or a salt mine.

22. The method as claimed in claim 17, wherein said step of storing said charcoal entails storing said charcoal in an above-ground bunker facility.

23. The method as claimed in claim 17, further including the steps of:

prior to said step of storing said charcoal, separating a fraction of said charcoal from a remaining portion of said charcoal;

respectively converting said separated fraction of said charcoal either (i) into energy or (ii) into an energy source; and

limiting said separated fraction of said charcoal to an amount which, upon conversion into either energy or an energy source with concomitant release of CO_2, generates an amount of CO_2 equivalent to the amount of carbon present in said remaining portion of said charcoal.

24. The method as claimed in claim 23, wherein said step of converting said separated fraction of said charcoal into either energy or energy source includes converting said charcoal into synthesis gas for producing industrial products.

25. The method as claimed in claim 23, wherein said step of converting said separated fraction of said charcoal into either the energy or the energy source includes converting said charcoal into hydrogen as an energy source.

26. The method as claimed in claim 18, further entailing the step of:

retrieving a fraction of said stored charcoal from a remaining portion of said stored charcoal;

respectively converting said retrieved fraction of said stored charcoal into either (i) energy or (ii) an energy source; and

limiting said retrieved fraction of said stored charcoal to an amount which, upon conversion into the energy or the energy source with concomitant release of CO_2 into the atmosphere, generates an amount of CO_2 equivalent to the amount of carbon present in said remaining portion of said stored charcoal.

27. The method as claimed in claim 26, wherein said step of converting said retrieved fraction of said charcoal into the energy or the energy source includes converting said charcoal into synthesis gas for producing industrial products.

28. The method as claimed in claim 26, wherein said step of converting said retrieved fraction of said charcoal into the energy or the energy source includes converting said retrieved fraction of said charcoal into hydrogen as the energy source.

29. The method as claimed in claim 18, further including:

carrying out a sequence of a multiple number of said steps of harvesting, regrowing said harvested wood, converting said harvested wood into charcoal and storing said charcoal in order to achieve a balance between the rate of CO_2 removal from the atmosphere and the rate of CO_2 release into the atmosphere at an atmospheric CO_2 level below the level causing the undesired greenhouse effect.

30. The method as claimed in claim 29, further including the steps of:

retrieving a fraction of said stored charcoal from a remaining portion of said stored charcoal;

respectively converting said retrieved fraction of said charcoal either into (i) energy or (ii) an energy source;

limiting said retrieved fraction of said stored charcoal to an amount corresponding to at least one of said steps of storing said charcoal in said sequence of said multiple number of steps of harvesting and regrowing said harvested wood, converting said harvested wood into charcoal and storing said charcoal.

31. The method as claimed in claim 30, wherein said step of converting said retrieved fraction of said stored charcoal into the energy or the energy source includes converting said retrieved fraction of said stored charcoal into synthesis gas for producing industrial products.

32. The method as claimed in claim 30, wherein said step of converting said retrieved fraction of said stored charcoal into the energy or the energy source includes converting said retrieved fraction of said stored charcoal into hydrogen as an energy source.

33. The method as claimed in claim 18, wherein said step of harvesting said wood entails harvesting said wood from a given forested area.

34. The method as claimed in claim 33, further including the steps of:

harvesting a first portion of said wood for use in the non-combusting wood processing industry; and

harvesting an additional second portion of said wood for conversion into charcoal.

35. The method as defined in claim 34, wherein said step of harvesting said wood from said given forested area entails harvesting said wood from a sustainably forested area which has an assimilation power for atmospheric CO_2, said assimilation power being reduced as a result of the harvesting operation and being regained during a growth period following said harvesting operation.

36. The method as claimed in claim 35, further including the steps of:

harvesting a first portion of said wood for use in the non-combusting wood processing industry; and

harvesting an additional second portion of said wood for conversion into charcoal.